

Environmentally Critical Areas

Interjurisdictional Review of Ordinance Proposed by City of Sammamish Planning Commission, Focusing on Exempt Wetlands and Erosion Hazard Areas

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Introduction

On February 12, 2013, the City of Sammamish Planning Commission transmitted its recommended update to the City's environmentally critical areas code (ECA) to the City Council. As the Council proceeded with its review, its attention has focused on two provisions in the ECA in particular: a proposed expansion of the size of wetlands that would be exempt from the ECA's normal mitigation sequencing requirements; and a pilot program proposed to test the effects of new developments that would be allowed in the no-disturbance area of the City's Erosion Hazard Near Sensitive Water Bodies (EHNSWB) Overlay. Issues related to the two provisions received extensive public comments during the Planning Commission's process. State agencies also provided extensive comments, particularly the Washington Department of Ecology (WDOE).

The City Council would like the option to include the final ECA to be incorporated into the City's Shoreline Master Program (SMP), to ensure consistent regulation of critical areas throughout the City's jurisdiction. WDOE has final authority to approve SMPs, thus giving its concerns over the ECA additional weight. WDOE advises reviewing critical area provisions in the context of a jurisdiction's unique environmental features and also of the entirety of its critical areas ordinance, recognizing that the ordinance works as a whole, with different features interacting with and potentially balancing one another. In addition, the City Council has been interested to consider how the Planning Commission's proposed update compares with the adopted critical area ordinances of other jurisdictions that share at least some of Sammamish's characteristics. City staff therefore contracted with AMEC Environment and Infrastructure, Inc. (AMEC) to review the proposed ECA and compare it to the critical area ordinances of Issaquah, Redmond, Renton, and Kent. AMEC's review was to focus on provisions concerning exempt wetlands and erosion hazard areas, considering them in the context of other relevant provisions in each jurisdiction's critical areas ordinance.

AMEC's Approach

AMEC's review placed special emphasis on provisions for exemptions, mitigation, all erosion hazard issues, all wetland issues, and stream issues (because streams so frequently interact with wetlands). While AMEC's review also considered other general provisions of each ordinance, these were typically

very similar across jurisdictions (e.g., exceptions for reasonable use, which are mandated by the U.S. Supreme Court).

Because each critical area ordinance does indeed work as a whole, this report reviews each city's ordinance in turn, incorporating comparisons with other jurisdictions within this discussion. Comments are primarily focused on provisions concerning wetlands and erosion hazards. The report then includes a short discussion of the proposed ECA relative to comments submitted by WDOE. It concludes with final comments on the provisions proposed by the Planning Commission for wetland exemptions and the EHNSWB.

Interjurisdictional Comparison

For brevity, the jurisdiction-by-jurisdiction review below highlights distinguishing aspects of each critical area ordinance, rather than attempting to provide a comprehensive summary. The proposed ECA for Sammamish receives the most attention.

Sammamish

The geology and topography of the City of Sammamish and the sensitivity of Lake Sammamish, which receives most of the City's surface water runoff, are partly responsible for some of the unique aspects of the City's ECA. Many key provisions of the ECA date back to King County's East Lake Sammamish Basin Plan, which was finalized in 1994. The Plan noted that the diversity of the basin's wetlands was "as great as anywhere in King County, with nine rated as unique and outstanding." The Plan also noted that the western slope of the basin, now almost entirely contained within the City of Sammamish, is highly erosive. Erosion from this area poses risks to Lake Sammamish, which is sensitive to inputs of phosphorus, a common element in soils. High phosphorus inputs can lead to eutrophication of lakes (i.e., high production of algae, which can cause "dead zones" with little or no oxygen in lower levels of lakes as a result of the decomposition of algae after it dies and sinks). For these reasons, the Plan proposed special protections for wetlands and erosive slopes that (with some alterations over time) generally remain in place today.

Wetlands

The most distinguishing aspect of the City's current wetland regulations is the special district overlay, which includes areas of low-density zoning with restrictions on impervious surface and vegetation retention as well as additional areas where new development must be clustered away from sensitive areas and retain native vegetation. These provisions recognize that wetlands are affected by the entire area draining to them, not just the immediately surrounding properties (which are most affected by ECA buffers). The lake management area for Beaver Lake and the Beaver Lake Management District, which funds monitoring and protection efforts for the lake, further recognize this landscape approach to protecting Beaver Lake and its related wetland systems.

Wetland buffers in the proposed ECA remain the same as in the City's existing ordinance, and are fairly typical of buffers adopted by other jurisdictions in the region, tending a little toward the lower end for

the highest quality wetlands. Bogs and natural heritage wetlands have a 215' buffer; other Category I wetlands have buffers up to 200' (for those with the highest habitat ratings). Category II wetlands with the highest habitat ratings have 150' buffers. Best available science (BAS) would generally support substantially larger buffers for all of these wetlands, such as the 300' recommended by the Washington Department of Ecology for wetlands with the highest habitat ratings, primarily based on the needs of wildlife. Smaller regulatory buffers for these wetlands (such as those in Sammamish) are not uncommon, however, particularly in urban areas.

The proposed ECA allows for unusually large reductions in buffer widths (up to 50%) in return for a variety of actions landowners and developers can take to improve the actual function of buffer areas (e.g., plant native vegetation, remove impervious surface, etc.) or to reduce the impacts on buffers from adjacent development (e.g., installation of pervious driveways, water quality treatment exceeding normal stormwater regulations, etc.). The total potential percentage reduction is unchanged from the current ordinance, but the proposed ECA provides substantially more detail regarding the basis for potential reductions. The proposed ECA also provides substantial new detail on the basis for potentially increasing required buffers beyond the standard amounts in certain cases, including the proximity of other wetlands with high habitat scores and the proximity of other types of critical areas, particularly fish and wildlife habitat conservation areas. The proposed ECA includes a requirement to provide protected corridors between wetlands with high habitat scores and other high-habitat-value wetlands or fish-bearing or perennial streams that are within 200' (please note that we have discussed some concerns with this proposed language with city staff, and we expect that staff will suggest some potential clarifying amendments to the council). The current ordinance's provision for relatively wide, 150' buffers on fish-bearing streams, which also benefit non-fish species, is retained.

As to mitigation of wetland impacts, the proposed ECA brings Sammamish more in line with the other jurisdictions reviewed (and with Department of Ecology recommendations), including increased mitigation ratios for wetland losses (up to 12:1 for forested, Category I wetlands, which means that 12 acres of Category I wetlands would need to be re-habilitated for every one acre lost from new development; the ratio would be 6:1 for creating or re-establishing Category I wetlands to compensate for such losses). Mitigation ratios substantially greater than 1:1 compensate for both the uncertainty of success in equaling the functions of existing wetlands as well as the considerable time lag before some functions, such as those that depend on mature trees, can be achieved. The proposed ECA also allows for mitigation banks and in-lieu fee programs, which can be controversial (partly because they generally allow for off-site mitigation). However, BAS can support these programs, given the prospect of larger, more ecologically valuable restoration that would replace losses of lower-value wetlands and stream riparian areas, so long as the restored wetlands are monitored to assure they meet performance expectations.

Exemption from mitigation sequencing means that losses of exempt wetlands need not be avoided or minimized, but still must be mitigated. The proposed ECA exemption for isolated Category III and IV

wetlands up to 4,000 square feet¹ would allow alterations up to 2,500 square feet, with mitigation to replace lost wetland functions and values (using the mitigation provisions just discussed, although mitigation ratios are much lower for Category III and IV wetlands). This exemption is within the range of recommendations from WDOE, although WDOE staff have raised concerns about it, as will be discussed toward the end of this report. AMEC's *Best Available Science Report* on wetlands noted that there is no science to support size-specific thresholds for exempting wetlands from regulation, and that even small wetlands can provide significant ecological functions. However, policy reasons can lead jurisdictions to exempt small wetlands from at least some regulatory protections, including providing landowners greater flexibility for use of their land and the potential benefits from larger, more ecologically valuable wetlands that might be restored through mitigation, as discussed above. Of the jurisdictions reviewed for this report, the maximum size of wetland exempted in the proposed Sammamish ECA is similar to that in Issaquah and Renton, smaller than that of Kent, and considerably larger than that of Redmond.

Redmond, Issaquah and Renton, however, include more than just mitigation sequencing in their exemptions. The exemption in Redmond (which applies only to isolated, Category IV wetlands less than 250 square feet) is from all critical area protections. Issaquah and Renton do not require buffers for exempt wetlands, although impacts on buffer areas must be mitigated. The proposed Sammamish ECA would reduce buffers on Category III and IV wetlands 4,000 square feet or smaller from 50' to 15', if they have low habitat values, are not part of a wetland mosaic, and the buffer reduction is mitigated. Where the other jurisdictions do apply buffer requirements, none are less than 25'.

Erosion Hazards

As noted above, the most distinguishing feature of Sammamish's erosion hazard regulations is the Erosion Hazards Near Sensitive Water Bodies (EHNSWB) overlay. None of the other jurisdictions reviewed have comparable special regulations. Kent, Renton, and Redmond do not drain to a major water body as sensitive to phosphorus as Lake Sammamish. While all of Issaquah drains to Lake Sammamish, the geology, topography, and land use patterns of the Issaquah Creek basin are substantially different from those of the East Lake Sammamish basin, lessening the need for a comparable overlay in Issaquah.

Even outside of the EHNSWB overlay, erosion hazard regulations in the proposed ECA are generally stricter than those of the other jurisdictions reviewed. They include special requirements such as: qualified professionals must perform a pre-design site inspection and review grading plans for the risk of erosion; a financial guarantee for the temporary erosion control plan in place during construction; and regular water quality monitoring reports for all subdivisions and short subdivisions draining to Lake Sammamish. Sammamish's stream buffers, which are on the higher end of the range found in other

¹ To be eligible for exemptions, wetlands must not: be adjacent to a riparian area; be part of a wetland mosaic; score 15 points or greater for habitat value; or contain habitat identified by the Washington Department of Fish and Wildlife as essential for local populations of priority species.

jurisdictions reviewed (for both fish-bearing and non-fish-bearing streams), also provide some additional protections against erosion and sedimentation.

Within the EHNSWB overlay, the proposed ECA tightens regulation of new single-family home construction or reconstruction, requiring that any such development resulting in a total of more than 2,000 square feet of impervious surface shall meet low-impact development (LID) standards, including retention of at least 65% of the site in open space, restricting impervious surface to no more than 10% of the gross site area, and strict stormwater management requirements.

The proposed ECA also includes a pilot program that would allow nine new land division applications in parts of the no-disturbance area where slopes are less than 40%. The pilot program will evaluate whether and how increased development in the area could be allowed “without adversely affecting the water quality of Lake Sammamish.” Three subdivisions would be allowed that would install permanent water quality treatment and tightline stormwater discharge directly to Lake Sammamish. Three short subdivisions would also be allowed that would either: 1) follow the same tightline regulations; 2) follow the LID standards just discussed for single-family homes; or 3) for project sites less than five acres in total, where access to Lake Sammamish is only available via connection to an existing off-site, man-made conveyance, install Level 3 flow control stormwater facilities (intended to protect lakes), limit the amount of impervious surface, and retain open space (although for these small sites not nearly to LID standards). Lastly, three new subdivisions would be allowed that meet either the low-impact development standards or the set of stormwater requirements just discussed, including enhanced flow control and phosphorus removal requirements. All nine pilot projects would be required to clear and grade land only between May 1 and September 30, install permanent stormwater facilities ahead of other grading and construction work, include water quality treatment facilities to remove 60% of total phosphorus from the development, and provide regular water quality monitoring reports from before construction through five years after project completion.

Allowances for Existing Development

For existing development that is located within critical area buffers or setback areas, the proposed ECA would allow a one-time expansion of building footprint and impervious areas up to 1,000 square feet, provided:

- there is no increased risk to life or property;
- the expansion is toward the critical area only if there is an existing house in-between the first building and the critical area and the expansion remains at least 50’ away from the critical area; and
- restoration of degraded areas or expansions of other parts of the buffer provide a net improvement in habitat and hydrologic values.

Assuming this last clause can be met, this provision is not necessarily less protective than regulations in other jurisdictions. It is certainly more flexible than many, such as Renton and Kent, which do not allow an increase in the existing impervious footprint. Redmond does not allow an increased footprint within wetlands or their buffers, but does allow it for stream buffers because of special circumstances along

Evans Creek (Cathy Beam, Principal Environmental Planner, personal communication). Issaquah allows single family homes to expand within wetland or stream buffers, potentially towards the critical area, if a critical area study shows no adverse impact and avoiding such an expansion would impose “undue hardship” on the landowner.

Redmond

The City of Redmond generally has the most protective critical area regulations of the other four cities reviewed. As with Sammamish, this is partly because of its unique environmental setting, which includes the lower portion of the Bear Creek basin, one of the most productive salmon streams in lowland Puget Sound. Redmond participated in King County’s development of the Bear Creek Basin Plan, which included larger stream buffers than are typical elsewhere in the region. Redmond’s stream buffers are generally as large as or larger than Sammamish’s for fish-bearing streams, but for non-fish-bearing streams outside of headwater areas they are smaller than those in Sammamish’s ECA (only 36’ for perennial and 25’ for seasonal streams, vs. Sammamish’s 75’ and 50’, which are unchanged in the proposed ordinance). Redmond, however, does not allow reductions in its stream buffers except through buffer averaging, when a net gain in habitat protection can be achieved; even then, the buffer can be no more than 25% smaller than standard at any given place.

Redmond’s standard wetland buffers are the largest of any of those reviewed—300’ for high-habitat value wetlands (Category I or II), 150’ for Category III wetlands, and 50’ to 25’ for Category IV wetlands. The larger numbers, however, can be reduced if a development provides a relatively undisturbed 100’-wide corridor to priority habitat designated by the Washington Department of Fish and Wildlife or if it follows a set of recommendations from WDOE to reduce impacts. Redmond’s buffer averaging rules for wetlands are the same as for streams.

Mitigation ratios for wetland losses are generally the same as for Sammamish, except that Redmond allows losses of Category I wetlands only when necessary to meet reasonable use requirements. Redmond also allows mitigation for wetland losses through just enhancement of existing wetlands (albeit at much higher ratios than for other forms of mitigation), while Sammamish counts enhancement of existing wetlands toward mitigating wetland losses only if combined with re-establishment or creation of additional wetlands. Although Redmond has not explicitly authorized wetland mitigation banks or in-lieu fee programs, provisions for off-site mitigation (which still require location within the city limits) are broad enough that they have been used for both purposes (Cathy Beam, personal communication).

Redmond has by far the most restrictive exemptions for wetland losses of the cities reviewed, allowing them only for isolated Category IV wetlands smaller than 250 square feet. Such losses are, however, completely exempt from critical area protections, in contrast to Sammamish’s exemption from mitigation sequencing.

Redmond’s erosion hazard regulations apply where designated erosive soils are on slopes greater than 15%. Development on these slopes requires geotechnical engineering to verify that it will not increase surface water discharge or sedimentation to downslope areas or decrease slope stability. Point

discharges of stormwater are prohibited unless they are tightlined beyond the erosion hazard, infiltrated without saturating the slope, or do not exceed pre-development volumes, with adequate energy dissipation.

Issaquah

The City of Issaquah recently updated its critical area regulations as part of updating its Shoreline Master Program. A number of provisions of its old ordinance that differed substantially from Sammamish and other cities have been brought more into the norm.

Issaquah's standard wetland buffers (which did not change in its recent update) are generally larger than those of Sammamish (e.g., Category I and II wetlands with high habitat values have 225' buffers, vs. 200' and 150', respectively, in Sammamish), although Issaquah's buffers for Category IV wetlands are slightly smaller (40', vs. Sammamish's 50'). Issaquah provides for reduced buffers as incentives for restoring degraded buffer areas, but the maximum reduction is 25% (vs. 50% in Sammamish). Buffer averaging is allowed, but with a maximum 25% reduction in any given place.

Issaquah's recently adopted mitigation ratios are very similar to those of Sammamish. Off-site mitigation that would provide increased functions and values is authorized, as are wetland mitigation banks, but not in-lieu fee programs.

Before its recent update, Issaquah had completely exempted Class IV wetlands (whether isolated or not) below 2,500 square feet from any critical area protections. The updated code provides no buffers for these wetlands but does require mitigation for their loss or alteration. Mitigation requirements for these wetlands differ from those for others—allowing, for example, the protection of an equal area of significant trees on-site that would not otherwise be protected to serve as adequate mitigation for wetland losses.

Issaquah's stream buffers are smaller than those of Sammamish for fish-bearing streams (100' vs. 150'). Buffer reductions and buffer averaging are handled essentially the same way as for wetlands. Issaquah has not authorized either mitigation banks or in-lieu fee mitigation for losses of stream buffers.

Erosion hazard areas are designated based on soils that tend to destabilize on slopes greater than 15%. Development in these areas requires an erosion control plan and has some special limitations on clearing.

Renton

The City of Renton provides the least strict and most idiosyncratic protections of wetlands of all the cities reviewed. (These provisions will likely change significantly with the update of the city's critical areas ordinance, a process that is just getting underway; Renton adopted its updated SMP in May 2012.) Renton uses its own definitions of wetland categories, which are substantially different from those recommended by WDOE (which most local governments follow). Renton's largest standard wetland buffers are 100', which is half or less of typical buffer widths, including those of all the other cities reviewed. Category 2 and Category 3 wetlands receive 50' and 25' buffers, respectively. Increased

buffers are required if wildlife that would typically need more buffer area are documented at the wetland. Unusually, Renton allows up to 25% reductions in buffer widths when buffers are extensively vegetated (which BAS would typically suggest as a reason to consider increasing required buffers, to protect the high functions and values provided). Buffer averaging is allowed, with up to 50% reductions in any one place, maintaining a minimum width of 25'.

Renton's mitigation ratios for wetland losses are lower than all other jurisdictions reviewed. Off-site mitigation is allowed when it would serve regional goals or provide significantly greater functions and is within the same drainage basin as the wetland losses. Renton jointly sponsors a wetland mitigation bank with the Washington State Department of Transportation, which uses its share for projects on I-405 and SR 167. Renton staff expect the City's share will mostly be used for City projects, but may be used for some private projects in the future (Ron Straka, Stormwater Manager, personal communication).

Loss or degradation of Category 3 wetlands less than 2,200 square feet (whether isolated or not) are exempt from restrictions if the wetland has designated characteristics that would not support amphibians and "some form of mitigation is provided for hydrologic and water quality functions." Renton staff have confirmed this would typically be significantly less mitigation than under the City's normal provisions (Laureen Nicolay, Senior Planner, personal communication). Additionally, any isolated Category 3 wetland that is located on top of legally placed fill is not regulated as a critical area.

Renton's stream buffers are on the low end of the typical range, but not as unusually low as its standard wetland buffers. Once again, these buffers may be reduced if their condition is good, a very unusual provision.

Erosion hazard areas are designated based on soils that tend to destabilize on slopes greater than 15%. Development in these areas requires an erosion control plan and may be further conditioned before approval.

Kent

The City of Kent's standard wetland buffers are similar to those of Sammamish. Kent provides some unusual incentives with its buffers, allowing reductions of approximately 10% (the precise amount depends on the class of wetland) if a list of actions are undertaken that would reduce impacts from the development. The city offers a 10% density bonus if a developer chooses to increase wetland buffers by 25', and a 20% bonus for a 50' increase. Buffer averaging is allowed only in exceptional circumstances, with a maximum reduction of 50% in any one place, down to a minimum width of 25'. Restoration of buffers is required, even if a landowner or developer accepts the standard width.

Kent's mitigation ratios for wetland losses are similar to Renton's (significantly smaller than Sammamish's), but Kent's are based on WDOE's classification system and also allow for significant reductions in the acreage required for created or restored wetlands if combined with substantial enhancement of other wetlands. As with Renton, off-site mitigation is allowed if it could provide

significantly greater benefits and is within the same drainage basin. Kent's ordinance authorizes a wetland mitigation bank if it would operate just within the city.

Kent provides the largest exemptions from mitigation sequencing of all the cities reviewed: for isolated, emergent Class 3 or 4 wetlands less than 5,000 square feet; and up to 10,000 square feet for Class 3 wetlands with low habitat scores and Class 4 wetlands, if either are outside of riparian corridors.

Kent's stream buffers are generally the smallest of the cities reviewed: 100' for fish-bearing streams; 40' for non-fish bearing streams; and 50' for fish-bearing streams in a "valley industrial" overlay, where many existing buildings are located within the standard buffer and buffer conditions are generally degraded. (Kent's SMP Update, effective February 2010, did not change its standard stream or wetland buffers.)

Kent defines erosion hazards based on the soils and slope of a development site. Permitted development is not supposed to increase the erosion threat, but even if there is a significant risk of damage, only monitoring is required unless actual damage is documented.

Comments Submitted by WDOE

The Washington Department of Ecology (WDOE) submitted multiple comments to Sammamish on the issue of exempting small, isolated wetlands from critical area requirements, most recently in an e-mail on December 6, 2012 (Exhibit 271), concerning criteria WDOE would use to evaluate Sammamish's exemption as part of an amendment to the City's Shoreline Master Program (SMP). That e-mail both reiterated previous comments and stated that: (1) the exemption should only be considered for isolated wetlands; (2) the City should require mitigation providing for no net loss of functions and values; and (3) the City's proposal and supporting analysis must demonstrate consistency with applicable goals and substantive requirements of WDOE's guidelines for SMPs (the most important of which call for no net loss of functions and values, based on a cumulative impacts analysis). In conversations between WDOE and City staff (Evan Maxim, Senior Planner, personal communication), WDOE also advised Sammamish to consider the wetland exemption provision in light of the ECA as a whole.

Comparison of Proposed Exemption to WDOE Criteria

The Planning Commission's proposed exemption applies only to isolated wetlands and requires the standard mitigation process, which calls for no net loss of functions and values, so the first two of the three criteria identified in WDOE's December 6 e-mail have been met. City staff are currently performing a cumulative impacts analysis, which (among other considerations) will include discussion considering isolated Class IV wetlands within the 200' shorelands zone governed by the City's SMP. (The only three waterbodies in Sammamish to which the SMP applies are Lake Sammamish, Beaver Lake, or Pine Lake. Wetlands within 200' of those large lakes are likely not "isolated," just because of that proximity alone.)

WDOE's other comments on the exemption issue have included excerpts from WDOE's "Wetlands Guidance for Small Cities" (see <https://fortress.wa.gov/ecy/publications/publications/1006002.pdf>) and a "Recommended Regulatory Approach for Small Wetlands" provided by Patrick McGraner, a wetland planner in the Northwest Regional Office. The latter approach includes an "option" for exempting

wetlands that is actually broader than that in the proposed ECA: it would apply to isolated Category III and IV wetlands up to 4,000 square feet with habitat values below 20 in the WDOE rating system (vs. 15 in the proposed ECA); and it would allow the complete loss of such wetlands, with mitigation, while the proposed ECA would allow alterations only up to 2,500 square feet.² However, the City's proposed ECA would reduce buffers for such wetlands in all cases (even if they remain unaltered) to 15 feet, if mitigation is provided for lost buffer functions. WDOE's recommendations do not suggest buffer reductions. Given the uncertainty in mitigating impacts from reduced buffers, it seems likely that the reduced buffers would tend to reduce water quality in these wetlands and would, at least on a cumulative basis, reduce any systemic water quality benefits provided by these wetlands.

There are significant tradeoffs at stake on this issue. Even a 15' buffer on a 1,000 square-foot wetland would be approximately twice the size of the wetland itself. A 50' standard buffer would be approximately 13 times the size of a 1,000 square-foot wetland, and about four times the size of a 4,000 square-foot wetland. Buffers on small wetlands can therefore have a disproportionate effect on landowner flexibility.

WDOE's "Small Cities" guidance is stricter than the "option" discussed above. It would exempt isolated Category III and IV wetlands only less than 1,000 square feet from buffer and mitigation sequencing requirements. The proposed ECA includes this provision, but also adds the above provisions for Category III and IV wetlands up to 4,000 square feet. "Small cities" typically have less expertise and staff resources than does Sammamish, and so may need simpler regulations to administer.

WDOE's guidance documents stress that "there is no support for exempting small wetlands in the scientific literature," a point also made in AMEC's BAS report on wetlands for Sammamish. WDOE's proposed exemptions are intended to provide flexibility to jurisdictions, landowners, and developers, recognizing the practical need to balance other considerations against purely environmental ones.

Review of Proposed Pilot Program in EHNSWB Overlay in the Context of WDOE Comments

In addition to the wetland exemption, WDOE also commented on the City's proposed ECA provisions for development in erosion hazard areas (Exhibit 229). WDOE stressed Lake Sammamish's sensitivity to phosphorus loading, noting that "stringent local protection of steep slopes, riparian, wetland and lake buffers" would be required to prevent increased phosphorus loading even with "sensitive lake" stormwater management requirements. WDOE recommended against allowing increased development in sensitive areas.

² We should note an ecological concern with this provision, which over time would presumably increase the number of very small isolated wetlands in Sammamish. From an ecological standpoint, it would probably be better to allow the complete filling of wetlands up to a certain limit (whether that be 2,500 or 4,000 square feet) with mitigation, which has the potential to create or augment more valuable wetlands elsewhere.

Almost by definition, the pilot projects authorized in the proposed ECA would increase phosphorus loading to Lake Sammamish. The requirement that post-development water quality treatment be implemented to “remove, on an annual basis, 60% or more of all new total phosphorus loading resulting from new development and associated storm water discharge” [emphasis added] anticipates a net increase in the amount of phosphorus delivered to the lake. Without knowing the actual size of the pilot projects to be built, it is impossible to estimate how much additional phosphorus this would involve, or what portion it would comprise of the total amount of phosphorus entering Lake Sammamish.

Conclusion

The proposed exemption from mitigation sequencing³ for small isolated wetlands recommended by the Sammamish Planning Commission, while expanded from the current ECA, is within the range of the ordinances of all other jurisdictions reviewed except Redmond. The proposed exemption is also within the range of general guidance provided by WDOE. The expanded exemption might, however, lead to some cumulative losses in wetland functions and values, given the uncertainties and time lags involved with wetland mitigation and the lower mitigation ratios applied to Category III and IV wetlands (compared to Category I or II). The reduction of standard buffers from 50’ to 15’ for these small, isolated wetlands would likely also create cumulative losses in functions and values, but the Council may wish to weigh the magnitude of these losses against the greater flexibility provided to landowners and developers. Since few, if any, of these small wetlands are likely to be found in the shorelands regulated under the SMP, cumulative impacts within the shorelands themselves should be relatively small.

As with any development in the basin, the proposed pilot program for the “no-disturbance” area within the EHNSWB overlay will almost certainly lead to increased phosphorus loading to Lake Sammamish. While further analysis might demonstrate this increase to be a relatively small portion of the total phosphorus entering the lake from all sources, given the erosiveness of high relief areas in the EHNSWB overlay it still could be a disproportionate amount compared to that contributed by new development in other areas of the lake basin. If Sammamish pursues the pilot program as an experiment in adaptive management, it should identify in advance the metrics it plans to use to judge the success or failure of that experiment, and then ensure that monitoring will collect the relevant data.

Although King County monitoring data through 2012 has found Lake Sammamish to be under its targeted maximum for mean annual levels of total phosphorus concentration consistently since 2006, it also has found levels of summer chlorophyll-a (a measure of algae production and sensitive to phosphorus loading) at or above its targeted maximum at mid-lake stations every year since 2002 (Debra Brouhard, Water Quality Planner, King County Water and Land Resources Division, personal communication). This

³ It should be noted that the Planning Commission’s proposed language for SMC 21A.50.320(2) states that these isolated wetlands are exempt both from sequencing “and the provisions of SMC 21A.50.290,” which is where buffer standards are set. The meaning of the quoted language is at least ambiguous relative to our understanding of the Planning Commission’s intent, which is for buffer requirements to continue to apply to whatever portion of these wetlands is not filled under this exemption.

suggests that the lake may be sensitive to even fairly marginal increases in phosphorus loading.

Although, even with the proposed pilot program, Sammamish would have by far the strictest regulations for erosion hazard areas of all the cities reviewed, given the soils and slope of the western part of the city and the sensitivity of its receiving waters, Sammamish also has the greatest reason for strict regulations in these areas.